



SAW Components

SAW IF filter

TD-SCDMA

Series/type:	B5077
Ordering code:	B39141-B5077-Z510
Date:	Sep 19, 2007
Version:	2.0



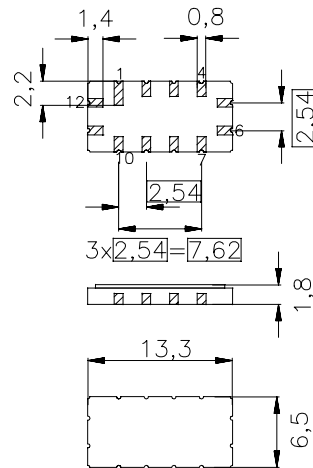
Application

- Low-loss IF filter for TD-SCDMA base station
- Usable passband 8 MHz
- Balanced or unbalanced operation possible



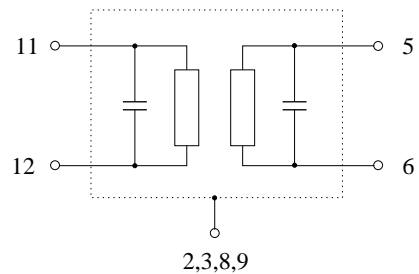
Features

- Package size 13.3 x 6.5 x 1.8 mm³
- Package code QCC12
- RoHS compatible
- Approx. weight 0.44 g
- Ceramic package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- Filter surface passivated



Pin configuration

- 11 Input
- 12 Input ground
- 5 Output
- 6 Output ground
- 2, 3, 8, 9 To be grounded
- 1, 4, 7, 10 Case ground




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B5077
SAW IF filter
140.0 MHz

Data sheet


Characteristics

Operating temperature range:	T = +25 °C
Terminating source impedance:	Z _S = 50 Ω and matching network
Terminating load impedance:	Z _L = 50 Ω and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f _N	—	140.0	—	MHz
Minimum insertion attenuation (including matching network)	α _{min}	—	9.3	9.7	dB
Passband width					
	α _{rel} ≤ 1 dB B _{1dB}	9.6	9.9	—	MHz
	α _{rel} ≤ 3 dB B _{3dB}	10.6	10.9	—	MHz
	α _{rel} ≤ 35 dB B _{35dB}	—	14.1	15	MHz
Amplitude ripple (p-p)	Δα				
	f _N ± 4.24 MHz	—	0.4	0.8	dB
Phase ripple (p-p)	Δφ				
	f _N ± 4.24 MHz	—	5	15	°
Group delay ripple (p-p)	Δτ				
	f _N ± 4.24 MHz	—	50	120	ns
Absolute group delay (at f_N)	τ	—	940	—	ns
Relative attenuation (relative to α_{min})	α _{rel}				
	f _N - 30.0 MHz ... f _N - 10.0 MHz	40	46	—	dB
	f _N - 10.0 MHz ... f _N - 7.5 MHz	35	45	—	dB
	f _N + 7.5 MHz ... f _N + 15.0 MHz	35	39	—	dB
	f _N + 15.0 MHz ... f _N + 30.0 MHz	40	43	—	dB
Temperature coefficient of frequency	TC _f	—	-87	—	ppm/K



Data sheet



Characteristics

Operating temperature range: $T = -10$ to $+85$ °C
 Terminating source impedance: $Z_S = 50 \Omega$ and matching network
 Terminating load impedance: $Z_L = 50 \Omega$ and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	140.0	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	9.3	10.0	dB
Passband width					
	$\alpha_{rel} \leq 1$ dB B_{1dB}	9.6	9.9	—	MHz
	$\alpha_{rel} \leq 3$ dB B_{3dB}	10.6	10.9	—	MHz
	$\alpha_{rel} \leq 35$ dB B_{35dB}	—	14.1	15	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
	$f_N \pm 4.0$ MHz	—	0.4	1.0	dB
Phase ripple (p-p)	$\Delta\phi$				
	$f_N \pm 4.0$ MHz	—	5	15	°
Group delay ripple (p-p)	$\Delta\tau$				
	$f_N \pm 4.0$ MHz	—	50	120	ns
Absolute group delay (at f_N)	τ	—	940	—	ns
Relative attenuation (relative to α_{min})	α_{rel}				
	$f_N - 30.0$ MHz ... $f_N - 10.0$ MHz	40	46	—	dB
	$f_N - 10.0$ MHz ... $f_N - 8.0$ MHz	35	45	—	dB
	$f_N + 8.0$ MHz ... $f_N + 15.0$ MHz	35	39	—	dB
	$f_N + 15.0$ MHz ... $f_N + 30.0$ MHz	40	43	—	dB
Temperature coefficient of frequency	TC_f	—	-87	—	ppm/K



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B5077

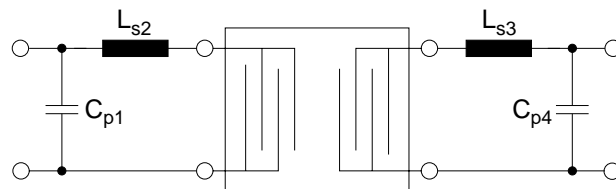
SAW IF filter

140.0 MHz

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SMD

Matching network to 50 Ω



$$C_{p1} = 27.0 \text{ pF}$$

$$L_{s2} = 56.0 \text{ nH}$$

$$L_{s3} = 56.0 \text{ nH}$$

$$C_{p4} = 5.6 \text{ pF}$$

Element values depend upon PCB layout.

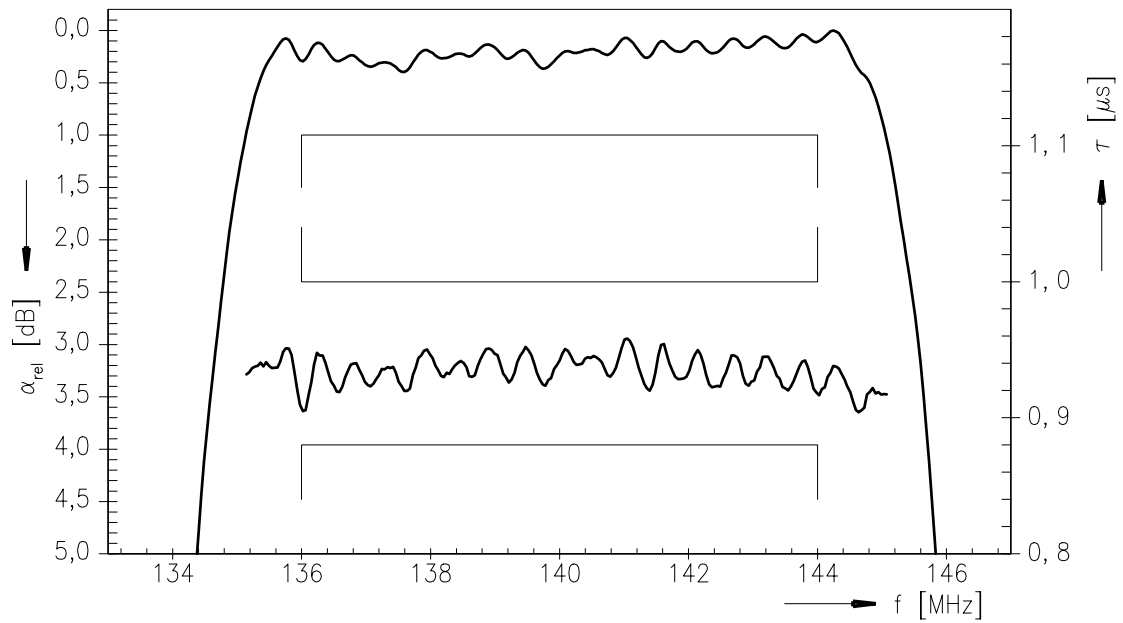
Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{sta}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
Input power	P _{IN}	5	dBm	

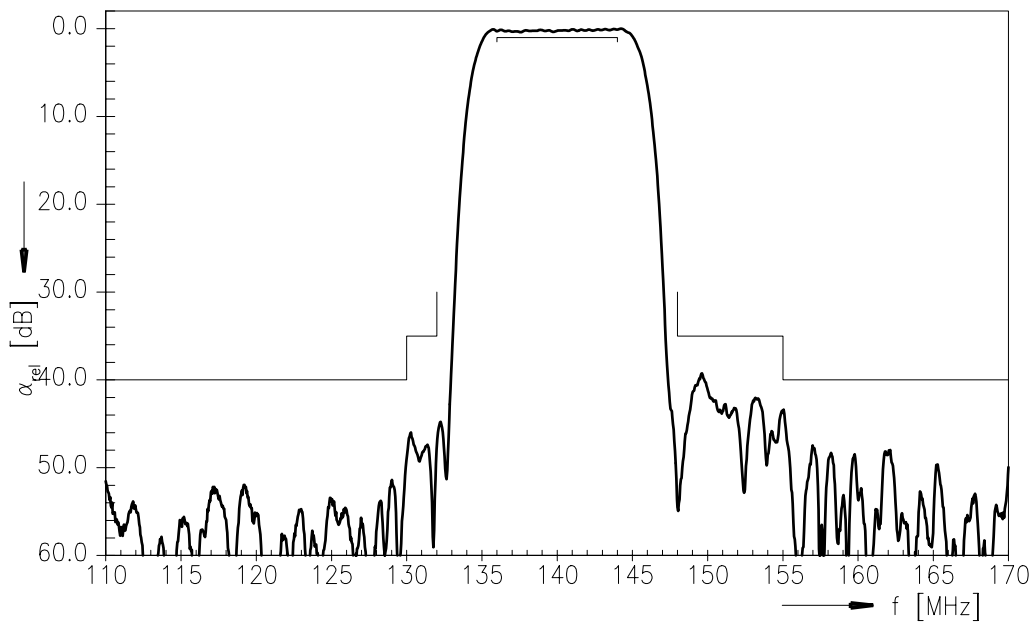
Please read *cautions and warnings and important notes* at the end of this document.



Transfer function



Transfer function (wideband)





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SAW IF filter	140.0 MHz
Data sheet	

References

Type	B5077
Ordering code	B39141-B5077-Z510
Marking and package	C61157-A7-A103
Packaging	F61074-V8170-Z000
Date codes	L_1126
S-parameters	
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

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